

**Patent claims**

1. A device having a CFRP sheet (4) for reinforcing bearing structures (1), characterized in that the ends 5 of the CFRP sheet (4) are provided with coupling means (7), or means for a bonding bridge, which emerge in a respective termination element (3, 3') in which the CFRP sheet (4) with respectively at least one wedge (6, 6') are pressed in.
- 10 2. The device as claimed in claim 1, characterized in that the coupling means (7) are applied to the CFRP sheet (4) at least on one side.
- 15 3. The device as claimed in claim 1 or 2, characterized in that the coupling means (7), in the region of the termination element (3), at least partially cover the latter.
- 20 4. The device as claimed in one of claims 1-3, characterized in that the coupling means (7) consist of an adhesive, of an abrasive, such as, say, of a grain size of 0.1- 1.0 mm, of a film provided with an abrasive, of a powder coating or a plasma coating.
- 25 5. The device as claimed in one of claims 1-4, characterized in that the termination element has a sleeve (5), in which at least the inner side is conically configured.
- 30 6. The device as claimed in claim 5, characterized in that the sleeve (5) has a substantially circular or elliptical inner cross section.
- 35 7. The device as claimed in claim 5, characterized in that the sleeve (5) has a substantially square or rectangular inner cross section.

8. The device as claimed in one of claims 1-7, characterized in that the termination element (3) is made of metal or of plastic.

5 9. The device as claimed in one of claims 1-8, characterized in that the coupling means (7) are located between the inner side of the sleeve (5) and the wedges (6, 6') and at least partially cover the latter.

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10. A process for reinforcing bearing structures (1) by the use of devices as claimed in one of claims 1-9, characterized

15 1. in that in the bearing structure (1) recesses (2, 2') are made, in which supports are inserted and positioned,

20 2. in that the CFRP sheet (4) is guided, in sequence, through the first recess (2) and the first support, through the first termination element (3), disposed around the bearing structure (1), guided through the second recess (2') and the second support and through the second termination element (3'), until the CFRP sheet (4) juts over the latter,

25 3. in that the coupling means (7) are applied to the CFRP sheet (4) in the region of the termination elements (3, 3'),

30 4. in that the at least one wedge (6') of the second termination element (3') is pressed into the second sleeve (5') with the CFRP sheet (4), this being realized without pulling on the CFRP sheet (4),

35 5. in that the at least one wedge (6) of the first termination element (3) is driven in or pressed in and in that the CFRP sheet (4) is cut off above the first termination element (3).

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11. A process for reinforcing bearing structures (1) by the use of devices as claimed in one of claims 1-9, characterized

1. in that in the bearing structure (1) recesses (2, 2') are made, in which supports are inserted and positioned,
  2. in that the CFRP sheet (4) is guided, in sequence, through the first recess (2) and the first support, through the first termination element (3), disposed around the bearing structure (1), guided through the second recess (2') and the second support and through the second termination element (3'), until the CFRP sheet (4) juts over the latter,
  3. in that the coupling means (7) are applied to the CFRP sheet (4) in the region of the termination elements (3, 3'),
  4. in that the second sleeve (5') is forced onto the at least one wedge (6') of the second termination element (3') and the CFRP sheet (4), this being realized without pulling on the CFRP sheet (4),
  5. in that the first sleeve (5) is forced onto the at least one wedge (6) of the first termination element (3) and the CFRP sheet (4) and in that the CFRP sheet (4) is cut off above the first termination element (3).
12. The process as claimed in claim 10 or 11, characterized in that the device is fitted with or without prestress.
13. A process for reinforcing bearing structures (1) by the use of devices as claimed in one of claims 1-9, characterized
- 30 1. in that in the bearing structure (1) recesses (2, 2') are made, in which supports are inserted and positioned,
  2. in that the CFRP sheet (4) is guided, in sequence, through the first recess (2) and the first support, through the first termination element (3), disposed around the bearing structure (1), guided through the second recess (2') and the second support and through the second termination element (3'), until the CFRP sheet (4) juts over the latter.

3. in that the coupling means (7) are applied to the CFRP sheet (4) in the region of the termination elements (3, 3'),

4. in that the CFRP sheet (4) is prestressed, or  
5 10-20% overstressed, the at least one wedge (6, 6') being found loosely introduced in the sleeve (5), but not yet pressed in,

5. in that the prestress is partially slackened, the at least one wedge (6, 6') being drawn in or  
10 pressed in in self-wedging arrangement in the sleeve (5) and in that the CFRP sheet (4) is cut off above the first termination element (3).

14. The process as claimed in one of claims 10-13,  
15 characterized in that the CFRP sheet (4) is disposed around the traction side of the bearing structure (1) to be reinforced and is stuck at least partially on the latter.